PTO/SB/08A (08-03)

Approved for use through 07/31/2006. OMB 0651-0031

06469 USA

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number. Complete if Known Substitute for form 1449/PTO **Application Number** Filing Date INFORMATION DISCLOSURE STATEMENT BY APPLICANT First Named Inventor Dingjun Wu, et al. (Use as many sheets as necessary) **Art Unit Examiner Name**

Attorney Docket Number

U. S. PATENT DOCUMENTS							
Examiner Cite Initials* No.1		Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear		
		Number-Kind Code ^{2 (# known)}			Relevant Figures Appear		
2419/24.9		^{US-} 2001/0011526 A1	8/9/2001	K. Doering, et al.			
Br Sheff		^{US-} 2001/0055852 A1	12/27/2001	T. S. Moise, et al.			
apple 168		^{US-} 5,288,662	2/24/1994	A. Lagendijk, et al.			
2/3-18/11/s		^{US-} 5,298,075	3/29/1994	A. Lagendijk, et al.			
Millel		^{US-} 5,356,478	10/18/1994	C. Chen, et al.			
SH Int 8	-	^{US-} 5,454,903	10/3/1995	F. C. Redeker, et al.			
THURKL	7	^{0S-} 5,756,400	5/26/1998	Y. Ye, et al.			
Hillor	14	^{US-} 5,879,459	3/9/1999	P. N. Gadgil, et al.			
A Yhelol	-	^{US-} 5,972,722	10/26/1999	M. R. Visokay, et al.			
2/1/67/		^{US-} 6,174,377	1/16/2001	K. Doering, et al.			
Baller		^{US-} 6,211,035	4/3/2001	T. S. Moise, et al.			
MATHY		^{US-} 6,238,582	5/29/2001	K. E. Williams, et al.			
Xles 86 764		^{US-} 6,387,185	5/14/2002	K. Doering, et al.			
		US-					
		US-					
		US-					

		FORE	GN PATENT D	OCUMENTS		
Examiner Initials*	Cite No.1	Foreign Patent Document Country Code ³ Number ⁴ Kind Code ⁵ (7	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T ⁶
Manhales	-	EP 1 001 459 A2	5/17/2000	Europe		✓
1/18/32/4		WO 00/40772	7/13/2000	World		
MANUSOS	-	WO 00/79019 A1	12/28/2000	World		
1/6/1/24	4-	WO 02/43114 A2	5/30/2002	World		
FOR 8 tres		WO 02/43115 A2	5/30/2002	World		

, <i>p</i> ,		
Examiner 1	Date 9/32/04	
Examiner	Date Considered 9/22/04	

Signature | Considered | // CU /

"EXAMINER: Initial Melerence considered, whether or not citation is in conformance with MPEP 609. Draw line through ditation if not in conformation and not considered. Include copy of this form with next communication to applicant: "Applicant's unique citation designation number (optional). "See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. "Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). "For USPTO Patent Documents at www.uspto.gov or MPEP 901.04. "Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). "For USPTO Patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. "Kind of document by Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. "Kind of document by Tapanese symbols as indicated on the document under WIPO Standard ST.16 if possible." Applicant is to place a check mark here if English language Tapanese Patent document under WIPO Standard ST.16 if possible. "Applicant is to place a check mark here if English language Tapanese Patent document under WIPO Standard ST.16 if possible." "Applicant is to place a check mark here if English language Tapanese Patent document under WIPO Standard ST.16 if possible." "Applicant is to place a check mark here if English language Tapanese Patent document under WIPO Standard ST.16 if possible." "Applicant is to place a check mark here if English language Tapanese Patent document under WIPO Standard ST.16 if possible." "Applicant is to place a check mark here if English language Indicated Date of the Emperor of the Patent Date of the English language Indicated Date of the Emperor of the Emp

This collection of Information is required by 37 CFR 1.97 and 1.98. The Information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, uspection including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO:

Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

of

2

Sheet

1

PTO/SB/08B (08-03)

Approved for use through 07/31/2006. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Penerwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Under the Paperwork Heduction Act of 1995, no persons are Substitute for form 1449/PTO		Complete if Known			
				Application Number	·
	FORMATI			Filing Date	
STATEMENT BY APPLICANT (Use as many sheets as necessary)				First Named Inventor	Dingjun Wu, et al.
			assary)	Art Unit	
				Examiner Name	
Sheet	2	of	2	Attorney Docket Number	06469 USA

		NON PATENT LITERATURE DOCUMENTS	
Examiner Initials*	Cite No. 1	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T²
1190 9 hr 169	j	K. K. Shih, "Hafnium Dioxide Etch-Stop Layer for Phase-Shifting Masks," J. Vac. Sci. Technol. B 11(6), pp. 2130-2131(1993).	1
9/22/08		J. A. Britten, "Etch-Stop Characteristics of Sc ₂ O ₃ and HfO ₂ Films for," J. Vac Sci. Technol. A 14(5), pp. 2973-2975 (1996).	~
1/22/09		J. Hong, "Comparison of C1 ₂ and F ₂ Based Chemistries for the," J. Vac. Sci. Technol. A 17(4), pp. 1326-1330 (1999).	✓
9/22/14		J. W. Lee, "Electron Cyclotron Resonance Plasma Etching of Oxides," J. Vac Sci. Technol. A 16(3), pp. 1944-1948.	
1/2/06		W. G. M. van den Hoek, "The Etch Mechanism for A12O3 in Fluorine and Chlorine Based RF Dry Etch Plasma," Mat. Res. Soc. Symp. Proc., 68, pp. 71-78 (1986).	_
9/246		J. E. Spencer, et al., "Emission Spectroscopy of CC14 and BC13 Plasma During Aluminum Etchning," Proceedings—Electrochemical Society, 82-7, pp. 103-107 (1982).	V
1/52/04		T. Kanniainen, et al, "Growth of Dielectric HfO₂/Ta₂O₅ Thin Film Nanolaminate Capacitors by Atomic Layer Epitaxy," Proceedings—Electrochemical Society, 97-31, pp. 36-46 (1998).	Y
9/22/04		H. B. Bell, et al., "Reactive Ion Etching of Aluminum/Silicon in BBr3/Cl ₂ and BCl ₃ /Cl ₂ Mixtures," Journal of Electrochemical Society, 135(5), pp. 1184-91 (1988).	_
0/22/04		Y. S. Lee, et al., "Mass Spectrometric Characterization of BCl ₃ /SF ₆ Plasmas," Journal of Applied Physics, 88(8), pp. 4507-4509 (1980).	V
71/2 /4		N. Heiman, et al., "High Rate Reactive Ion Etching of Al ₂ O ₃ and Si," J. Vac. Sci. Technol., 17(3), pp. 731-734 (1980).	V
1151		K. Shibata, et al., "Manufacturing Method and its Equipment of Thin Film Magnetic Head," Japanese Patent Application JP2000251221A (2000).	V
1/2/64		J. Chen, et al., "Formation of Polycrystalline Silicon Germanium/HfO ₂ Gate Stack Structure Using Inductively Coupled Plasma Etching," J. Vac. Sci. Technol. A 21(4), pp. 1210-1217 (2003).	Y

			 	 0-1-		/		$\overline{}$
Examiner	1		<i>D</i>	Date		/_	12	(i
Examine	\ //			Considered	l (/ /	/フラ /		$\boldsymbol{\tau}$
Cianotura	//	/		COHBIGHER	7.7	(//		_
Signature		/	//	 	16			

*EXAMINER: Initial if reference considered, whether or not citation is in conformation with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Applicant's unique citation designation number (optional). Applicant is to place a check mark here if English language Translation is attached. This collection of information is required by 37 CFR 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: C mmission rf r Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

л, мюженина, ч м 22019-1400. If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.